FE / Sem-I (Rev) 31/5/2012
Computer Programming - I

GN-8669

(3 hours) **[Total: 100 Marks**

NB:

1. Question number **one** (01) is compulsory.
2. Attempt any **four** (04) questions from remaining.
3. Make suitable assumptions if required and state them clearly

Q.1 a.) **10**

I. Consider following code

```
void show ( int a ,int  b , int  c )
{ cout<< a<< "  " << b <<"  "<< c;
        }
int *I , j;
   i = &j;
    j = 2;
int k[ ] = { 1,2,3};
```

what will be output of following statements

```
show ( *I , j , *k );
show ( *k ,*k++ );
```

II. Select the correct option : A class becomes an abstract class when

i) Key word abstract precedes the class name
ii) All the functions in the class are pure virtual
iii) Atleast one function in the class ispure virtual
iv) It derives virtually from base class

III.

```
#define m ( a, b) ( a>b  ?  a: b )
void main()
{
int I = 5 , j = 15 ;
cout<< m( ++i , j++);
}
```

IV. What is the output of following code :

```
void swap ( int i , int j)
{int temp;
temp = i ; I = j ; j = temp;
}
void main( )
{
int k = 13 , m = 45;
swap ( k , m);
cout<< "k = " << k << "m = " << m;
}
```

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V. Select the correct answer

while (expression)

{}

To terminate this loop value of expression should evaluate to

i) True

ii) False

b) Discuss the merits and demerits of Object Oriented Methodology. **10**

Q.2 a) Write a program to find number of and sum of all integers greater than 200 and less than 350 that are divisible by 9. **10**

b) Write a program which reads an integer N followed by N numbers; It prints each number and sum of the numbers read so far. **10**

Q.3 a) Differentiate between Structures and Unions from the point of view of Operations on them and memory allocation. **10**

b) Write a program to represent and process Complex Numbers as a structure. Process should include addition of complex numbers and printing them in x+iy format. **10**

Q.4 a) Write a method called ***delete(String str , int m)*** in an appropriate class that returns the input string with m th character removed. **10**

b) Explain various storage classes in c++. **10**

Q.5 a) Class String has a data member ***str*** of type char*. Distinguish from the point of view of constructors following statements: **10**

String name1 (" XYZ");

String name2(name1);

b) What are destructors? State the necessity of destructor in Q.5a. **10**

Q.6 a) Write a C++ program to add two matrices. **10**

b) Explain binary operator overloading using a suitable example. **10**

Q.7 Write notes on following (any two) **20**

a) Run time polymorphism

b) Data Abstraction and Data Encapsulation

c) Friend function